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The Relationship between Anxiety, Engagement in a Learning Situation, and Client-Centered Teaching

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THE RELATIONSHIP BETWEEN ANXIETY, ENGAGEMENT IN A
LEARNING SITUATION, AND CLIENT-CENTERED
TEACHING

by

WILLIAM E. DAVIS

A Thesis Submitted to the Faculty of the Graduate School of Loyola
University in Partial Fulfillment of the Require-
ments for the Degree of
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LIFE

William Edward Davis was born in Chicago, Illinois, December 2, 1934.

He attended Sacred Heart Preparatory Seminary in Geneva, Illinois, from September, 1948 to June, 1952.

He enlisted in the U.S. Navy in January, 1953 and received an Honorable Discharge in August, 1954.

He was graduated from Loras College, Dubuque, Iowa, June, 1958, with the Degree of Bachelor of Arts, and from Loyola University in January, 1962, with the Degree, Master of Education.

He was a teacher of English at Lane Technical High School, Chicago, Illinois from 1960-1963.

He began his graduate studies in the Psychology Department at Loyola University, Chicago, in January, 1963 and began his practicum training in Clinical Psychology at the Loyola Center for Child Guidance in February, 1964.

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CHAPTER I

INTRODUCTION

The purpose of this project is to induce an anxiety reaction and describe it in quantifiable terms. Our major focus is the role that anxiety plays in the life of the individual in the world. Although anxiety has been more commonly associated with abnormal behavior, it will be regarded as a normal human phenomenon here.

Freud was among the first to attempt a description of anxiety. In his early writings he delineated an anxiety neurosis as distinct from neurasthenia. (1963) The word, "anxiety," appears often in his discussion of other "categories" in psychopathology, and it took on the nature of a kind of pressure resulting from unreleased libidinal energy. (1938)

One characteristic which the Freudian view shared with most extant conceptualizations of anxiety is a diffuse feeling of unrest, indigenous to the human organism. Although Freud conceptualized it within a psychopathological framework, the implication is that the feeling of anxiety is normal to the human condition and that it need not necessarily be associated with neuroticism.

Kierkegaard, some sixty years before Freud, wrote of dread as something which can move a man to greater awareness or as something which can lead him to an "existential death." (1946) That group in psychotherapy which look to Kierkegaard as their intellectual ancestor have seized upon the idea of

existential death as being the key to much of psychopathology and even as an explanation for such phenomena as "voodoo" death. (May, 1950; May et al, 1948) In the same vein, Frankl has coined the term, "noogenic neurosis," to describe the person's feeling that his life has no meaning or purpose. (Frankl, Victor, 1955; 1959)

Again the emphasis has been on the "abnormal" and its treatment. However, in reading the existentialists, one is struck by the idea that anxiety is a characteristic of everyone. Rollo May made a clear distinction between normal anxiety and that which could be considered pathological. Anxiety becomes pathological when a person's "...Feeling of threat is out of proportion to objective threat..." and neurotic defense mechanisms are employed so that whatever "objective threat" is really present "...cannot be confronted." (May, 1950, p. 149)

Thus, although man's inability to deal with his anxiety has been viewed as a source of most existing psychopathology, the experience of one's own anxiety is something which all humans must share. If the reason for one's anxiety is successfully confronted, one matures, i.e., one becomes more aware of oneself and one's world, and, consequently, better at the everyday business of living.

Directly related to the above, Erik Erikson, in conceptualizing human growth and development, has written of a series of identities through which the individual must pass, if he is to mature, in his trek from infancy to old age. (1950; 1955) Anxiety is experienced during the movement from one "identity" to another, as, for example, from adolescence to young adulthood. The process which Erikson describes can be looked upon as learning of a very profound sort. The person learns to cope with his world and his being in the

world. By analogy, anxiety can be looked upon as the motivational "push" behind this movement or learning.

To extend the analogy still further, one could conceptualize the feeling of "identity diffusion" as a fear of a loss of identity. The same concept can be described in the existentialist's language. Fear of a lack of identity or "identity diffusion" can very readily be interpreted as a "fear of becoming nothing." (May, 1950) The implication of both views, the existentialist's and the more psychoanalytically orientated Erikson's, is that anxiety, experienced as a fear of one's inadequacy and manifested in a diffuse feeling of unrest and hypertension, is indigeneous to the human maturing process.

In addition to the more clinical interest discussed above, there has been a similar interest in anxiety and anxiety-like concepts within more academic psychological circles. The work done has been primarily with anxiety questionnaires. Probably the foremost measure has been the Taylor Manifest Anxiety Scale (MAS). (1953) The scale consists of statements to which the subject responds with either a "true" or a "False." The statements deal with feelings associated with anxiety states. The subject is asked to attest to his own feelings of anxiety.

As was pointed out by Taylor (1956), there are two views about what scale scores reflect, i.e., whether they are chronic or acute emotional states. In the first conceptualization, anxiety scale scores are relatively stable indices. In the second, anxiety is conceptualized as a potential for arousal the implication being that the scale scores would be quite sensitive to environmental threat or to stress on the part of the person taking the test.

In this study we are operating under the second hypothesis, that anxiety,

as measured by anxiety scales, is affected by situational stress.

In dealing with anxiety questionnaires or any other situation where a person is asked to attest to his own subjective feelings of threat, one must be aware that some defend against the awareness of anxiety while others do not. Since denial is so prevalent in defensive structures, it is probable that some people might deny their feelings of anxiety and actually attest to fewer manifestations of anxiety, as being true of them than in a less stressful situation. Others might simply attest to greater anxiety.

We are going to test the hypothesis that humans will manifest greater anxiety when they are in a learning situation in which they have made a personal investment than they will in a situation which is less personally involving. Stated in another way, we are asserting that when students are more "ego-involved" they will be more anxious.

In short the more distance a subject is from a stimulus object, the less import the stimulus object has on the subject's emotional state. (Hull, 1943) The more involved a person is in an activity, the more he tends to invest in the activity, the more he stands to lose if the activity is to no avail, and the more he may fear failure. The more responsibility a person may take for the success or the failure of the project the greater is the possibility that the failure of the project would be personally threatening. The more individuals are involved in goal directed activity, the more is the likelihood that the failure of that activity will be looked upon as a personal failure. This renders a situation in which a person is highly invested analagous, at least, to a stressful situation.

We are going to test the above hypothesis in two ways. First we shall

administer an anxiety scale to high school students, half of whom will be exposed to the more conventional "assign-study-recite" type of teaching for six weeks. At the end of the six week period, all classes will be re-tested.

In the former the student has the greater responsibility for learning, since the teacher takes on the role of counselor and does not supply information. Instead, the student must find the information which he may need. There is far less structure in this type of teaching and the very lack of structure would tend to make some people more anxious. It is the teacher's role to maintain an atmosphere which would enable the student to remain involved in the learning situation. If successful, the involvement will be greater. (Curran, 1952; Rogers, 1961).

In the latter, the more conventional type of teaching, the role of the teacher is that of information giver and director of the student's activity. The information given is what the teacher has decided that the students need to have. The students are much more the passive receptors of information. They take the responsibility for doing what they are told, but they do not take the responsibility for their own goal-directed activity to as great an extent as in the "student-centered" classroom. Hence, their involvement is not as complete.

It might be argued that members of a class where the teacher takes on a counselor's role would show less anxiety because of the acceptance of the counselor. Our present position is that the counselor's acceptance and understanding would not serve to lessen anxiety over the situation in which the students had become involved so much as to enable them to channel the resulting energy in a productive direction.

The second way in which we propose to test the hypothesis is to administer the anxiety scale to the classes exposed to "student-centered" teaching, as mentioned above, at the beginning of the six week period. All students will be working on a project for six weeks. Half of the class will be retested two days before the end of the project, while they are still engaged in the culminating exercise of the project. Involvement should be at its height at this point. The other half of the counseled group will be retested a few days later, after the culminating exercise of the project has been turned in to the teacher. Involvement should not be as high at this point as it was a few days before when the students were engaged in the project.

We are attempting to test our hypothesis in this study by using a relatively new measure of anxiety, the Nicolay-Walker Personal Reaction Schedule (PRS). It is constructed in the same manner as the MAS mentioned above, in the sense that it is a True/False questionnaire, the taking of which constitutes the subject's attesting or not attesting to his subjective feelings of anxiety. However, there are some important differences representing unique innovations.¹

The operational hypotheses to be tested may be stated as follows:

1. Anxiety, operationally defined as PRS scores, will be significantly higher with students who are exposed to "student-centered" teaching than with

¹For a discussion of the history of the MAS and the development of other indices of manifest anxiety, see below, "Review of Related Literature." For a discussion of the PRS, see below, "Design of the experiment."

students engaged in more conventional learning activity.

2. Anxiety, operationally defined as PRS scores, will be significantly higher with students who are actively engaged in a learning activity than with students who have terminated their activity.

As was considered above, there is some likelihood that a portion of a given population will attest to greater anxiety and stress, while others will be defended in such a way as to attest to less anxiety. This kind of change might spread the scores out on a continuum in such a way that there would be a greater variance of scores extracted from the "threatened" group than scores extracted from the "less threatened" group. For this reason we intend to test secondary hypotheses of a change in variance in anxiety scale scores to accompany greater personal investment in a learning situation.

The secondary operational hypotheses to be tested may be stated as follows:

3. The variance of anxiety scale scores (PRS scores) supplied by students engaged in "student-centered" learning will be significantly greater than the variance of anxiety scale scores (PRS scores) supplied by students engaged in more conventional learning activities.

4. The variance of anxiety scale scores (PRS scores) supplied by students actively engaged in learning activity will be significantly greater than the variance of anxiety scale scores (PRS scores) supplied by students who have terminated their activity.

CHAPTER II

REVIEW OF RELATED LITERATURE

The great recent interest in anxiety and anxiety-like constructs has been reflected in both molar and molecular research. Although the present study is of the molar variety, it seems appropriate to present a brief review of the more molecular physiological research in areas related to anxiety.

The more recent theories positing a central nervous system "center" for activation, E.G., the A.R.A.S. (Ascending Reticular Activating System), as an intervening variable to explain a heightened state of physical excitement (Malmo, 1959) seem to complement drive theory and the more clinical view of anxiety. (Malmo, 1958; O'Kelly, 1963)

It has been found that a general slowing down of physiological functioning as measured by E.E.G., E.K.G., G.S.R., and respiration rate occurs as the person passes from excitement through relaxed wakefulness through drowsiness to sleep. (Lindsley, D.B., 1951) Malmo reported a quickening of activity, as measured in the way described above, to accompany sleep deprivation. (1960) There is a corresponding quickening of physiological activity in the clinical description of anxiety states.

French et al (1956) were able to induce ulcers in monkeys by continual electrical stimulation of the hypothalamus. While it is not proper to generalize to an "ulcer seat" on the basis of this work, French's experiment does underscore the involvement of the central nervous system in a physical

ailment which has long been associated with anxiety.

Malmö was able to induce a slowing of heart rate in rats to accompany self-stimulation of the septal region. (1961) Malmö's work seems to shed more light on the now classical work of Olds and Milner. (1954) On the basis of their experimentation, they posited pleasure and pain centers in and about the septal region. Malmö's stimulation was accompanied by a decrease in a reaction normally associated with a high drive state, suggesting that such a decrease is rewarding.

In a more clinically orientated experiment, Malmö et al (1957) found not only a relationship between the reception of criticism on the part of the subject and neck and speech muscle tension but also a relationship between the giving of criticism on the part of the examiner and the same muscle tension. There was a relaxation of speech muscles on both parts to accompany praise. This study is limited due to the smallness of the sample, a limitation common to much physiologically orientated research. However, it again underscores the involvement of the neuro-endocrine system in anxiety.

As early as 1908 Yerkes and Dodson found that increasing the stimulus magnitude aided discrimination up to a point and that any increase in stimulus strength after that impeded discrimination. The above formulation became known as the Yerkes-Dodson law. Malmö, in connection with his activation theory, has posited a graphical inverted "U" arrangement in regard to the activity of the A.R.A.S. and the performance of the organism. In other words, in Malmö's view neuronal stimulation of the A.R.A.S. will heighten performance, up to a point. From that point, further stimulation will be accompanied by a breakdown in performance. This again is much like the result of an acute

anxiety reaction as described in clinical literature.

Paralleling Malmö's activation hypothesis is much of the molar experimental work in which anxiety is operationally defined in terms of anxiety scale scores. The anxiety scales in question are, for the most part, based on Hullian drive theory (Hull, 1943) as elaborated by Spence (1958) and Taylor (1956), the author of the MAS, the most popular anxiety questionnaire now in use. (1953)

The MAS was initially constructed by taking appropriate anxiety items from the MMPI to measure drive in humans (Taylor, 1953) but it was not presented as a clinical measure of anxiety. (Taylor, 1956) It has been found that it does not correlate well with Rorschach indicators of anxiety. (Cox and Sarason. 1954; Goldstein and Goldberger; 1955; Westrop, 1953)

Since the construction of the MAS, other anxiety questionnaires have come into prominence, some to measure manifest anxiety in children, the CMAS (Castaneda et al, 1956), and others to measure different kinds of anxiety, apparently of a more situational nature, such as the Test Anxiety Questionnaire (TAQ). (Sarason, S.B., and Mandler, 1952; Sarason, S.B., and Gordon, 1953)

Cattell and Scheier (1961) factor analyzed commonly used anxiety scales of the questionnaire variety and isolated six factors which were "neurotic" in nature. However, Cattell and Scheier make a distinction between anxiety and neuroticism, holding with the view that "neurotic" factors are intertwined with anxiety items on most anxiety questionnaires.

Using anxiety scales as the operational definition of anxiety, investigators have found that highly anxious subjects were more easily conditioned (Taylor, 1951), learned simple tasks better (Farber and Spence, 1953; Spence,

1958; Taylor and Spence, 1953), and that there were differences in scale scores between male and female. (Sinick, 1956; Taylor, 1953)

However, as tasks became more complicated or as stress was introduced low anxiety subjects eventually surpassed high anxiety subjects in performance. (Childs, 1954; Farber and Spence, 1953; Mandler and Sarason, S.B., 1952; Nicholson, 1958; Sarason, I.G., 1961; Sperber, 1961)

Davitz (1960) in a study involving social perception, found that highly anxious subjects saw themselves as less like others than low anxious subjects saw themselves. Gynther (1957) found highly anxious subjects communicated less efficiently than low anxious subjects. However, no interaction between anxiety and stress was found. Farber and Spence found no evidence that anxiety effected reaction time. (1956)

There seems to be many conflicting results in the experimental work done. I.G. Sarason (1960) pointed out that the confusion is due, at least in part, to the use of indices, such as the MAS, which measures a "general" anxiety level. He proposes that many indices be used to measure anxiety in each situation. It was this consideration which motivated the construction of the TAQ, mentioned above.

In spite of the contradictions, Sarason, in the same review of the literature, (1960) indicated that the greater bulk of the research has shown that those subjects who have been termed high anxious on the basis of their test scores (normally those who scored in the highest quartile of the population sampled) behaved as outlined above, i.e., they were more readily conditioned, learned simple tasks better, were more detrimentally affected by stress, were less able to learn complex tasks, and tended to exhibit more

defensive behavior than low anxious subjects (normally those who scored in the lowest quartile of the population sampled). There are two comments which might be made about the work done thus far. The first is that we seem to have conceptualized anxiety in terms of extremes regarding our operational definition, virtually ignoring the middle fifty percent of the populations sampled. The second is that high anxiety subjects seem to behave as if they were more "ego-involved" than low anxiety subjects. The last point works in well with the more clinical conceptualizations of anxiety. A more complicated task or the introduction of stress could be interpreted as more of a threat to the self or "ego" and more anxiety producing.

Much of the child work done in the area, using a children's version of anxiety scales, has run a parallel with the work reviewed above, using adult subjects. Thus, Castenedo (1956) found that high anxious children did less well on difficult tasks but better on simple tasks. However, many of the hypotheses tested were of a more clinical nature and high test anxiety in children has often been considered indicative of maladjustment.

Iscoe and Cochran (1960) found a relationship between the degree of maladjustment, as measured by a Teacher's Adjustment Scale, and high Children's Manifest Anxiety Scale (CMAS) scores. Sarason, S.B. et al (1960) found high anxious boys to be more insecure. Parents of high anxious children rated them less favorably than parents of low anxious children rated their offsprings. (Davidson et al, 1958) L'Abate (1960) found more daydreaming in high anxious girls but greater striving for independence in high anxious boys. Sarason et al (1958) found high anxious boys more dependent and insecure. One study, (Phillips, 1962) suggests that high anxious children did poorer in school

subjects than did low anxious children. Malpass et al (1960) found that retarded children had higher CMAS scores than "normal" children, but that there was no relationship between CMAS and I.Q., suggesting a situational anxiety.

A number of studies dealing with anxiety and children have suggested that the highly anxious child is less well identified with his or her sex role. Investigators have taken game preference (Sutton-Smith and Rosenberg, 1960), classroom observation (Sarason et al, 1960), classroom and playground observations (Iscoe and Caiden, 1960), a Masculinity-Femininity scale (Gray, 1957) and verbal behavior (Barnard, 1961) as measures of sex role identification. Both Gray (1957) and Iscoe (1961) indicated that low anxious children who identified better with their appropriate sex role found more acceptance from their peers.

It can be seen that the work done with children is much less ambiguous and contradictory than that done with adults, suggesting two alternatives which are not necessarily exclusive. There is a greater likelihood that an experimenter can control the environment more effectively or that it is already more unchanging for him in the case of children. The second alternative is that anxiety scales are less effective as predictors of performance as people grow older.

Also related to the present study are the attempts to determine the relationship between anxiety scale scores and academic achievement. Spielberger found no correlation between manifest anxiety and intelligence. (1958) Then he found no relationship between anxiety and college grades. (1959) Finally, he found a low inverse relationship between anxiety and college grades (1962), but he had to eliminate the brightest students, because they did well whether they were anxious or not, from his sample to obtain a

relationship. It should be remarked that studies dealing with success in college present a statistically restricted range, ability-wise, and the predictive value of measures of drive are perforce limited because of this restriction. The interaction between ability and anxiety scale scores should also be considered, i.e., one should ask what effect on a subject's anxiety scale score does his being placed in a challenging situation as opposed to that subject who might be placed in a potential failure situation.

Malnig (1964) presented his hypothesis, "differential prediction," which seems to offer a reasonable explanation for the conflicting evidence just cited. He found a greater variance in both the academic achievement and SCAT scores of high anxious students than of low anxious students. He hypothesized that anxiety, operationally defined as MAS scores, lessens the predictive validity of most measures of ability.

The present study differs from the work just reviewed in that it is an attempt to induce a change in anxiety scale scores.

CHAPTER III

DESIGN OF THE EXPERIMENT

Subjects:

The subjects were 99 second semester Sophomores and 87 second semester Juniors in English classes at Lane Technical High School in Chicago. Lane has an all male enrollment. Their ages on January 31, 1963 are listed in table I.

TABLE I
Means & SDs of H.S. Subjects in Months

Group	M	SD
C	191	21.67
X	193	19.92
Xy	191	6.61
Xx	195	27.49
Junior	199	26.44
Junior C	198	20.80
Junior X	200	27.33
Sophomore	186	16.70
Sophomore C	185	18.00
Sophomore X	186	15.39
Total	192	20.76

There were four classes of Sophomores and four classes of Juniors. Two of the Sophomore and two of the Junior classes were taught by the present writer; one Junior and one Sophomore class was taught by teacher A; one Junior and one Sophomore class was taught by teacher B. All of the author's classes were designated experimental "X". ($N=93$) Of these, one Sophomore and one Junior class was designated " X_x " ($N=43$); one Sophomore and one Junior class was designated " X_y " ($N=50$). All other classes were designated control "C". ($N=93$) Eight Sophomore students were lost from teacher A's class during the six weeks intervening between test and retest due to administrative class leveling. These were eliminated from the sample, reducing the total population to 178, the "C" group to 85, and teacher A's sophomore class to 18.

TABLE II

Distribution of Subjects in Groups and Classes

	Teacher A	Teacher B	Experimenter	
	C	C	Y	X
Sophomores				
N = 92	N = 18	N = 26	N = 27	N = 21
Juniors				
N = 86	20	21	23	22
	N _C = 85			N _X = 93
				N _T = 178

Test used:

We have attempted to test the hypotheses stated in the introduction by using a relatively new measure of anxiety, the Nicolay-Walker Personal Reaction Schedule (PRS). It is similar to the MAS, mentioned above, in that it is a True/False questionnaire, the taking of which constitutes the subject's attesting to or not attesting to his subjective feelings of anxiety. However, there are some important differences representing unique innovations.

The PRS contains three subscales which correspond to the three isolated factors representing three relatively "pure" types of anxiety. The three subscales are operationally defined as:

Anxiety Type M (Motor Tension)

Type M anxiety is characterized by concern with external achievements coupled with physical tension which acts as a defense against feelings of inadequacy. When Frustrations occurs, energy is channeled somatically instead of psychically. Type M anxiety results in hyperactivity, physical and mental restlessness, or jumpiness.

Anxiety Type O (Object)

Type O anxiety is characterized by concern that external demands and perceived expectancies may be overwhelming and one may suffer harm. It represents a projection or rationalization of one's personal inadequacy. It results in a magnification of personal problems out of proportion to objective reality. The emphasis is here on the external as a source of anxiety or unrest.

Anxiety Type P (Personal Inadequacy)

Type P anxiety is characterized by the concern that one may not be capable of meeting the difficulties of life. The person himself feels inadequate and the inadequacy lies within himself. There is a certain helplessness and self-evaluation which may give rise to guilt feelings. The focus of the uncertainty is one's own inadequacy. (Walker, R.E. and Nicolay, R.C., 1963)

The 87 items were mixed with 30 K-scale items from the MMPI. Since we shall use only the total M-O-P score, we shall supply normative data only for the total:

TABLE III

The Mean and Standard Deviation on the
Personal Reaction Schedule for 948 Undergraduates.

Scale	Mean	SD
Total M-O-P		
Males	31.39	10.50
Females	30.43	9.48
Total	31.16	10.22

Test-Retest reliability for 197 college subjects.

Total PRS, $r = .87$

Pearson Product Moment Correlation between PRS and MAS.

Total r , PRS and MAS = .71

The above data is adapted from: (Walker, R.E. and Nicolay, R.C., 1963)

As can be seen from Table III, the Total M-O-P correlates rather well with the MAS ($r = .71$). Thus it would seem reasonable that many of the inferences drawn from the use of the MAS are also applicable to the PRS.

Procedure:

At the beginning of the spring semester all students in the author's classes were asked to write a descriptive paragraph and an expository theme. These were evaluated by the author and the students were informed in individual conferences about areas of weakness in general writing skills. Each of the conferences were for about ten minutes and consisted, primarily, of information giving.

At the same time, during the first two weeks of the semester when classes were being leveled, letters were sent to the parents of the students in the eight classes mentioned above, asking their permission to allow their sons to take part in an experiment. They were assured that the privacy of the students or the families would not be violated and that the individual test scores would be released to no one. The parents were asked to discuss the matter with their sons and indicate their permission by signing the bottom of the letter and returning it to the experimenter.

The author visited each class and assured the students that this was merely a research project and not a subtle way of "finding out about them." They were asked to cooperate and were informed that, if they wished, the author would return after the project's completion and answer any reasonable questions about what we were trying to investigate.

All but six of the students contacted, excluding absentees, agreed to take part in the project and returned the signed letters. The six students who refrained were excluded from the sample. On January 31, 1963, the PRS was administered to all the subjects described above.

The classes taught by teachers A and B were handled in the same manner as

these two teachers had been accustomed. Both were women, and both had been teaching in the Chicago schools for at least seven years. Both had received the highest possible efficiency ratings from their principle. (Superior)

Teacher A's and teacher B's classes were re-tested at the end of a six week period. The students were not told of the re-test beforehand.

The author's classes, those who had been asked to write the two assignments while the letters were going out, began a project consisting of inter-related units of work on the day after the first test was administered. The aim of the project was to improve the student's writing skills and facility in written expression.

The classes were handled, within the limits set down by the official "Course of Study" of the Chicago Public Schools, in the manner described by Rogers. (1961) The teacher did not attempt to lecture or give information. Instead he accepted and reflected back to the students whatever negative or positive emotion which emerged during the project. He clarified and summarized what information they had found.

Each group was broken up into four committees which met during the last few minutes of each class session to coordinate the activities of the individual members. During the first two units representatives from each committee reported their progress to the rest of the class, and at the end of the first two units a final paper was written describing what each individual had gained from his two week's activities.

A brief description of the individual units follows:

I. Unit one was devoted to the improvement of writing skills.

Appropriate books dealing with grammar and writing style were made available to

the students. It was their responsibility to find the information which they needed and express their findings in the above-mentioned final paper of the unit.

II. During unit two books containing writings of modern British and American authors were made available, and it was the task of the student to determine why the work of the successful author differed from their own and what about it rendered it clearer, more forceful, or simply "better". The committees began resembling discussion groups much more so than during the first unit.

III. During unit three all students were asked to apply what they had learned, i.e., they were asked to write an expository theme, a short story, a character sketch, or a poem, whichever they chose. Rough drafts were written and submitted to the committees for criticism. The boys discussed and debated their work for over a week, while the teacher moved from group to group reflecting feelings and clarifying opinions. There was much less of negative emotional release during this session than the previous two. The final assignment was completed during the last three days of the project.

Two days before the colmination of the project the students in the X_x groups were re-administered the PRS. The author's other two classes, X_y were administered the PRS for the second time two days after the completion of the project, on the same day that the four control groups, C, were tested.

A great part of the negative emotion during the poject centered around the teacher's role. He was on the one hand a group counselor and on the other a discussion leader. At times, both he and the students experienced uncertainty about what he was. As the project progressed he moved more firmly into the role of discussion leader.

CHAPTER IV

RESULTS

Means, Variances, and Standard Deviations of PRS scores were computed for the total population, for the "X" group, for the "C" group, for the "XX" group, for the "XY" group, for the Sophomores, for the Juniors, for the Sophomore "X" group, for the Junior "X" group, and for the individual classes on both test

TABLE IV

Mean and Standard Deviations and Variances
by Classes, Grades and Total Population

	M		SD ²		SD	
	Test I	Test II	1	2	Test I	Test II
Control	31.67	31.25	144	186	12.00	13.64
Teacher A						
Sophomore (C)	34.67	30.94	195	152	13.96	11.33
Junior (C)	32.81	34.80	120	159	10.96	12.61
Teacher B						
Sophomore (C)	31.92	31.73	155	232	12.45	15.23
Junior (C)	27.71	27.52	87	158	9.33	12.57
Experimental	34.47	34.89	83	122	9.11	11.05
Sophomore (Y)	36.96	35.59	72	127	8.49	11.27
Sophomore (X)	35.62	34.10	73	102	8.54	10.10
Junior (Y)	35.17	38.44	76	105	8.72	10.25
Junior (X)	29.59	31.00	80	123	8.94	11.09
Total Sophomore	34.41	33.07	135	169	11.62	13.00
Total Junior	31.37	33.02	98	153	9.90	12.37
Total	33.14	33.04	144	156	10.68	12.49

As can be seen from Table IV there is some discrepancy between both Means and Variances. The discrepancy is noticeable between both test and retest with the same group and between groups during the same testing.

Mean Differences between test and retest were computed for each of the groups mentioned above and for whome Means, Variances, and Standard Deviations were supplied on Table IV. A "t" test for the difference between correlated means was applied to test the significance of the difference between test and retest of all the groups mentioned above.

TABLE V

t Ratios for Differences between Correlated Means

Individual Groups and Classes

Group	Class	t Ratio	Level of Sig.	Class	t Ratio	Level of Sig.
	Soph.			Junior		
A	Soph.	2.7611	.05	Junior	1.2285	N.S.
B	Soph.	.3021	N.S.	Junior	.1397	N.S.
Xy	Soph.	.8097	N.S.	Junior	2.6500	.05
Xx	Soph.	.8677	N.S.	Junior	.9889	N.S.
Total	Soph.	1.9595	.05	Junior	2.3510	.025
"X"	Soph.	1.1916	N.S.	Junior	2.5327	.05
"C"	Soph.	1.6970	N.S.	Junior	.8920	N.S.

Individual Groups-Combined Classes

Group	t Ratio	Level of Significance
"X"	.9810	N.S.
"C"	.5833	N.S.
Xx	.0014	N.S.
Xy	.9927	N.S.
Total	.0180	N.S.

Neither the "X" nor the "C" group reached significance. However, the Junior "X" group showed a significant increase in anxiety scale scores and the Junior "C" group, which changed in the same direction, did not reach significance. Neither the Sophomore "X" nor the Sophomore "C" groups reached significance in their change, but they both decreased on retest. The total Junior population increased significantly on retest. Sophomore group taught by teacher "A" showed a significant increase in anxiety scale scores on retest. Junior group "X_y" showed a significant increase in anxiety scale scores on retest.

The significance of the differences between significant differences described above was determined by means of a "t" test for the significance of the differences of differences between the Junior "X" group and the Junior "C" group. These differences did not reach significance (See Table VI), primarily because both groups varied in the same direction. In other words, the significant increase on retest by the Junior "X" group was not enough greater than that shown by the Junior "C" group to enable us to assert that it was due to factors other than our total Junior population's tendency to increase in anxiety scale scores on retest. Thus, Hypothesis number 1, as stated in the Introduction, was not substantiated.

TABLE VI

"t" Ratios for Significance of Significance of Differences

Groups	Ratio	Level of Significance
Junior "X" and "C"	1.0072	N.S.
Total Sophomore		
and	2.9209	.01
Total Junior		

Most of the change in the Junior "X" group was due to that which occurred in the Junior "Xy" group; Sophomore group "Xy" actually showed decreased anxiety scale scores on retest. (See table V) Hypothesis 2, as stated in the introduction, was not substantiated.

If one looks at the direction of change represented on Table V, one notices that all of the Sophomore classes, both "X" and "C" decreased on retest, and the total Sophomore population decreased significantly on retest. The total junior population increased significantly on retest, but Teacher "B's" Junior class did not increase with the others. A "t" test for the significance of differences of differences between Sophomores and Juniors was computed and a very significant difference was obtained. The major trend in the data, i.e., the Sophomores decreasing on retest and the Junior's increasing on retest, was not related to any of the hypotheses stated in the introduction. We shall give further attention to that trend in the next section, "Discussion of Results."

It will be noted on Table IV that the second testing supplied Variances and Standard Deviations which were larger than those supplied by the first

testing. The only exception to this was those scores supplied by the Sophomore classes taught by teacher A. The change, however, was on the part of both the "X" and the "C" groups.

Bartlett's Test for Homogeneity of Variance was applied to test the significance of this increase in Variance. As can be seen from Table VII, the eight variances supplied by the eight classes of students who were tested on January 31, 1962 appear to be homogeneous. Similarly, the eight variances supplied by the second testing of the same groups appeared to be homogeneous. None of the variances differed enough from the others in the sample on either test or retest to be explained by anything other than chance. Thus, hypotheses 3 and 4 were not substantiated.

TABLE VII

Bartlett's Test for Homogeneity of Variance

Groups	χ^2 Value	Sig. Needed	Level of Significance
Total and			
8 subgroups	10.9171	14.1	N.S.
(1st Testing)			
Total and			
8 subgroups	6.4316	14.1	N.S.
(2nd Testing)			

CHAPTER V

DISCUSSION

None of the Four hypotheses set forth in the "Introduction" were substantiated. There seemed to be a significant increase among the Junior experimental group which apparently substantiated, in part, hypothesis number one and lent credence to the notion that the added commitment involved in client-centered teaching, along with the possible presence of unassimilated knowledge would be detectable as an increase in anxiety scale scores.

However, the general tendency was for all of the Juniors to increase on retest, and a comparison of the above mentioned increase with the increase of the control groups did not yield a significant difference. If there was a trend in the data which substantiated the first hypothesis, it was "swallowed up" by this larger tendency.

Before offering a further discussion of the lack of significant results in this study it seems more appropriate to take up the decisive change which did occur in the data.

The most unexpected result was the Junior's increasing and the Sophomore's decreasing on retest. Conceptualizing what happened in terms of response to anxiety laden stimuli might be helpful.

One group, the younger, attested to more subjective feelings of anxiety than the older at the beginning of a semester in a situation which was relatively unstructured, i.e., many had never been taught by the teachers involved, had never taken classes in the same surroundings before, and had but

an imperfect idea of what was expected of them. On retest this same group attested to less anxiety. The older group, the Juniors, attested to less anxiety at the beginning of the semester in approximately the same situation in which the Sophomores found themselves, but on retest they attested to more.

There seem to be three factors involved in admitting to one's anxiety by means of a questionnaire like the PRS. The first is that the person must be aware of some feeling of threat or worthlessness or physical tension. If he is aware of none of these, he will have no subjective feelings of anxiety to admit to. The second is that he must see himself as more than or less than others in whatever quality is in question. The third is that he must be willing to admit to these subjective feelings.

The Sophomores attested to less anxiety on retest in an objectively less threatening situation than was present during the first testing session. This is to be expected on the basis of the first two factors outlined above. Certainly we could argue that they had become less trusting or more defensive, but unless we hold that six weeks of teaching and moving into a more settled routine made them more defensive, the above argument does not hold up. It seems much more likely that they were reflecting their own feelings.

The Juniors admitted to more anxiety with a less objectively threatening situation. Since their situation was approximately the same as the one in which the Sophomores found themselves, the reason for the difference must lie in the students themselves or in the social milieu in which they found themselves.

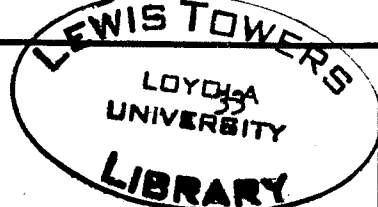
Taking up the question from the point of view of the Juniors themselves, one might argue that the Juniors were thirteen months older and had learned in that crucial thirteen months to become more evasive until they had become more

accustomed to the situation. If this were true, we would be implying that the opposite happened with the Juniors as happened with the Sophomores and we would be giving as our reason the fact that they were thirteen months older. It is doubtful that thirteen months of biological maturity is going to virtually reverse a person's mode of behavior.

However, it might be more fruitful to consider the differences in Social position between the Sophomores and the Juniors. The Juniors were considered upperclassmen and the Sophomores lower classmen. The Juniors were probably treated as being closer to adults and this treatment probably entailed more adult like defenses on their part. The Sophomores were not only underclassmen, they were not yet sixteen. They had not had a semester of more adult-like treatment (Both classes were in their second semester), and sixteen is the age at which a student may be dropped from school, a legal indication of adult-like status.

Even more far reaching is the fact that a sixteen year old may drive a car, and frequently does, may date, and frequently does, and may hold a job falling under the minimum wage laws, and frequently does. Most of the students in the older group had enjoyed these privileges and responsibilities for about four months. (See Table 1)

It seems that society almost thrusts adult roles and responsibilities onto young people at age sixteen. Secondly, it has long been a tradition in our culture that men living in the United States are not allowed the same emotional outlets as Europeans. For example, American men seldom if ever are allowed to cry, and they do not show affection, at least publicly. In short, we have a somewhat Stoical model in comparison with, for example, the middle European



group. Stoicism probably propagates defensive denial.

The Juniors may have been in the process of acquiring these more adult defenses, and the greater security in having a more structured school situation and knowing and trusting the teachers more may have enabled them to be more "honest." This may also offer an explanation for the counseled Junior group's showing a significant increase on retest and teacher B's group showing a slight but negligible decrease on retest.

It is difficult at this time to determine what was the situation with the Sophomores and the Juniors. Certainly, they both represent an "in between" state, i.e., in between childhood and adulthood. If our reasoning is correct in that the Juniors were thrust into adult responsibilities and the Sophomores were still in "the womb" of childhood, then other age levels, perhaps Freshmen and Sophomores or Juniors and Seniors, may have been better subjects for this study.

Our major conclusion regarding the dramatic difference in response to anxiety questionnaire retest is that we unwittingly seem to have uncovered a rich and valuable area to research in terms of adolescent development. This will be discussed further when we take up the question of further research.

The influence of the individual teachers may have been a factor in this study. Perhaps teacher B was more threatening, less understanding, or simply more demanding of adult-like behavior than the other two teachers involved.

The above does not offer an explanation for the experimental groups not involved changing as predicted. There are two alternatives which should be considered. The First is that our instrument, Total M-O-P, PRS, did not measure a "specific" enough kind of anxiety which might be attached to a

learning situation, i.e., that the PRS was not sensitive to the learning situation with which the students in the experimental group were preoccupied but was more sensitive to expressions of threat of a more "global" nature. Therefore, the students' preoccupation with the task may have prevented a significant change in scale scores.

In the present experiment we attempted to study a more positive type of "anxiety," but we seem to have set out to measure a situational type of reaction with a "Global" measure. The significant difference in directionality between Sophomores and Juniors hints at a more pervasive change reflecting a major alteration in the subject's manner of living.

The above point hints at what might be a difficulty with much of the research about anxiety, as well as with this research. As was pointed out in the Introduction, anxiety has been looked upon as a diffuse feeling of unrest. However, those who write in the area will often refer to anxiety as an indeterminate phenomenon, and then attempt a measurement in a specific situation.

Sarason's suggestion (1960), that there be measures of anxiety designed for each situation, seems very appropriate. The implication is not that there is no such thing as a "global" type of anxiety, only that people generally experience anxiety-like reactions associated with a particular stimulus object, and that they will more readily attest to having anxiety like feelings in connection with the threatening situation of which they have been a part than to "global" feelings dissociated from the situation.

Certainly implicit in much of the research with the MAS, when the experimenter writes of "high" and "low" anxious subjects, is that anxiety is a more chronic state. That work done with more specific measures such as the

TAQ, when the experimenter writes of subjects in a "test" situation and those in a "non-test" situation implies that anxiety is a more acute state. The Hypotheses stated in the Introduction of the present paper would imply this latter view, both in terms of the situation and in terms of the assimilation of new knowledge on the part of the students.

In addition to the acute versus chronic dilemma, there seems to be another centering around whether anxiety may be viewed as a "normal" phenomenon or not. Implicite to this study and to much of the published research involving anxiety questionnaires is the notion that anxiety is a normal phenomenon. To be more specific, the concept "Drive," which in Hull or Spence's theory is analogous to what the clinician's have called anxiety, has been viewed as essential to normal motivation.

We are faced with two questions regarding the nature of anxiety. The first is "What is it?" and the other is "If we accept the fact that some anxiety is a necessary concomitant of learning, then how much is desirable in learning and how much is too much?"

In our struggle to answer the first question we feel that one must abandon the operational definition of anxiety, i.e., defining it in terms of our measuring instrument because we are attempting to define the nature of a phenomenon which is not directly observable but which we attempt to quantify by means of a behavioral measure.

While there have been many frames of reference from which anxiety has been studied, it seems to be a phenomenon common to the human person. There appears to be one element common to the many views of the nature of anxiety. When a person is "anxious," he seems to be experiencing a diffuse feeling of excitement

or unrest. As was pointed out by Malmö (1957), there seems to be a heightening of physical tension accompanying the subjective experience of anxiety.

This state of diffuse excitement would seem to point to the presence of threat to the individual. However, writers in the area (e.g., May, 1950) state as their major distinguishing criteria between anxiety and fear that in fear there is a threatening object to which the person reacts appropriately. In anxiety states there is no "objective" threatening object, although the person will seek to find an "object" to which he can attach his anxiety.

In other words, the threat must be internal. In pursuing the question further, we must ask what it is that results in such unrest. It would seem that the Existentialists supply the clearest answer to this last question. As was mentioned in the "Introduction," Kierkegaard (1946) and May (1950; 1948) saw anxiety as ". . .fear of becoming nothing" or a fear of annihilation. One could very well argue that this is analogous to Freud's castration anxiety (1938), in that by analogy, a castrated male becomes nothing.

It might be useful to discuss this in terms of theorists who posit a "self" or a self-concept." (Maslow, 1954; Rogers, 1961) A fear of becoming nothing, in these terms, could very well result from any threat to the self. If any activity is perceived as a potential for the lowering of one's self esteem, that activity is seen as a direct threat to the self concept.

Any information which a person perceives as unknown, any activity which involves his changing a characteristic mode of behavior can be seen as potentially annihilating because the person initially does not know how he will change.

This brings us to the second point of emphasis in the existentialist's

formulations. The anxious person does not know what it is that he might or might not change and he does not really know what it is that is threatening him. With these considerations in mind we would offer the following as a definition of anxiety: Anxiety is a diffuse feeling of unrest in the presence of an ^{un-}understood object or activity which is, by virtue of its unknowableness, subjectively conceived as threatening to the person's concept of himself.

If anxiety is thought of in this light, it seems clear that human learning could not occur unless anxiety accompanied it. This brings us to the second question, "How much anxiety is desirable for learning and/or how much is too much?"

It is the present writer's opinion that we can not go about determining "how much is too much?" in a gross, quantitative manner. Some individuals can tolerate more anxiety than others, and some actually need an anxiety producing situation before they will work up to their capacity. Others would be overwhelmed by the same amount of anxiety, if we can, for descriptive purposes, conceptualize anxiety in terms of "amount."

What seems crucial here is the self-concept of the individual. If a person perceives himself as not worthwhile, there is good likelihood that he will not tolerate much more threat to his meager self-esteem. This might be the key, as well, to the acute versus chronic dilemma. What we have been calling chronic anxiety is much closer to what clinicians have been calling "neurotic anxiety." It would seem reasonable that chronic anxiety is that which is experienced by a person because he already has a low estimation of himself. He spends much of his time guarding what little self-esteem he has and attempting to bolster it by means of defensive maneuvers. There is much more "ego-involvement" on the

part of this type of individual and the "ego-involvement" is usually associated with any activity in his perceptual field. The reason for this is that he must guard himself from all threat, and he sees most things as threatening. This offers further insight into the findings that highly anxious subjects do not do as well on tasks in which there may be many interfering stimuli, and those which have shown that they are more easily distractable. (Sarason, 1960)

The person who has an adequate, and realistic, self-concept is certainly better equipped to tolerate more anxiety and by the same token, will probably learn more because he or she is more "open" to what is learned and can assimilate it with a minimum of distortion.

Another explanation for individual differences in people's ability to tolerate and benefit from anxiety could be the physiological make-up of the individual. Harkening back to the common characteristic of all conceptualizations of anxiety as stated above, we pointed to a diffuse feeling of unrest, a physical tension. It is within the realm of probability that individuals may differ in the amount of "activation" they can sustain without cortical centers "breaking down" in their activity. Certainly, this more somatic view can be seen as complementary to that associated with the self-concept.

One cannot adequately answer questions like "How much anxiety is too much?" if his only criteria are tests such as the M.A.S. or the P.R.S.

Both tests were initially constructed by asking clinicians to judge which of a large pool of questions asked a person to attest to his subjective feelings of anxiety. The individual test items refer to feelings of inadequacy either because the person himself feels inadequate and guilty, or because external demands will make him feel inadequate, restless and jumpy. (Walker, R. E., and

Nicolay, R. C., 1963)

The P.R.S. probably does tap what we have defined as anxiety because the individual test items are, to some extent, duplications of the description which we have presented, especially "chronic" anxiety, but that is begging the question of "how much?"

Getting back to the question, how much anxiety is too much for "learning," we must take into consideration the measure used, the task to be learned, the self-concept of the individual, the situation in which the learning is to occur, and probably other factors. Only then can we begin to quantify, admitting all the while that what we are quantifying is behavior which seems to result from the presence of anxiety, not anxiety itself.

At present, there is really no other way to quantify a construct such as anxiety. Intelligence testers do the same thing. They do not really measure intelligence, per se. What they measure is behavior which seems to result from intelligence. We quantify for purposes of better description, as if these constructs were directly measureable. One could say the same thing about any construct which one attempts to measure indirectly. This seems to be the major limitation the empirical approach. In other words, we attempt to observe behavior and quantify it and then postulate a hypothetical construct to "explain" what we have observed. We are further limited in that when the behavior is verbal we must either accept the subject as "truthful," take some measure to "validate" his score, or fall back on an actuarial type of validation in which we validate our construct continually as we validate our measure as was done with the M.A.S.

However inadequate and artificial this procedure may seem it is probably

the best we have for "noomothetic" research. It is probably true that "Ideographic" research would serve to describe the individual better, but the ideographic researcher is eventually faced with the problem of measuring behavior and quantifying it. He can not avoid it if he intends to generalize his results to any great extent. What may be needed is a totally new approach to experimentation, perhaps one which attempts communication in some language other than numbers. However, this last is pure speculation.

There are a number of avenues of productive research implied by this study. As suggested above, a great deal of work could and should be done in the general area of adolescence. Certainly our contention that there is a dramatic change in a student's general life situation between his Sophomore and Junior year because he is thrust into adult responsibilities and roles should be investigated. It would seem to be a very important missing step in our tracing the developmental history of the individual. We seem to have devoted much time and effort to studying younger individuals, but adolescence still remains somewhat a mystery.

The presented study was conceived of in terms of "pilot" research, and there are a great many weaknesses. It is part of the function of pilot studies to learn from one's mistakes. Aside from the question as to whether we used the proper kind of anxiety measure (see above), there is another which should be raised about the actual counseling procedure as used in the "counseled" classes.

In our "Design of the Experiment" (pp. 15 above) we indicated that the teacher "... reflected back to the student both positive and negative emotion," that he "... clarified and summarized information." This hints at a duality or even a triplicity of roles on the part of the teacher. It might have

been better, both from the point of view of actual learning and the point of view of good research methodology, if the teacher had taken a more definite role.

The problem with the presently reported situation is that the teacher tried to be a group counselor, a discussion leader, and, to some extent, a resource person. He could not be only a group counselor or therapist because within the framework of most school systems, Chicago Public being no exception, group counseling or group therapy in a class supposedly devoted to the learning of an academic skill would not be appropriate.

On the other hand, it is defeating the purpose of client centered teaching for the teacher to take on the role of a resource person, because there is really little to distinguish between that role and the more traditional one of "Information Giver." On the other hand it is almost absurd to consider that the teacher would be breaking a rule if he gave a bit of information when it was needed, especially in light of the fact that he must ultimately take the responsibility of grading the students. The issue at hand is not whether he is to give information or not, but whether he is to give it in those instances when the student could take the responsibility to get it himself, thus robbing the student of an opportunity to become a little more independent and, perhaps, a little more mature.

The teacher in charge of the "counseled" groups in the present experiment refused to answer any questions, and he probably induced much more frustration and tension by so slavishly adhering to the "rules."

The other role, discussion leader, which was sometimes confused with group counselor in the present study, differs from group counselor or therapist in

that a discussion leader tends to clarify the intellectual content of what is said while the counselor or therapist would tend to respond to the emotional impact of the verbalization.

If this study were to be replicated—we firmly believe that it should be—the role of the teacher should be clarified. If it were to be repeated in a situation like Lane Technical High School where the students are a rather "select" group, it would seem that the most productive role which the teacher could take would be that of discussion leader. However, there would be the reservation that if learning was being impeded because of emotional interference, then he would freely recognize the feelings and step into a counselor's role. We feel that it should be clarified to all concerned that that is what he is doing. Certainly a major flaw in the present study is that at times the experimenter tended to confuse ambivalence with allowing the students freedom and responsibility.

Another criticism which might be levied against the present study is that there was no assurance that the control groups did not learn. If a replication were to be undertaken, measures should be taken to insure that formal learning did not occur in the control groups.

However, as was implied above, one of the purposes of research, especially of "pilot" research, is to investigate a field and to learn from mistakes made in the preliminary study. Although none of the four hypotheses were substantiated, this study, if interpreted as a "pilot" study, has definite value.

CHAPTER VI

SUMMARY

Ninety-two Sophomore and eighty-six Junior High School English students were administered the PRS at the beginning of the second semester. The total population $N = 178$) was in eight individual classes.

Four of the eight classes, two Sophomore and two Junior (X), were exposed to "client-centered" teaching. One Sophomore and one Junior class (Xx) of the X group were retested two days prior to the completion of a six week project in which the "X" groups were engaged. The other two experimental groups (Xy) and the control groups (C) were tested at the end of six weeks, but after the project had been completed.

The hypotheses to be tested were:

1. Anxiety, operationally defined as PRS scores, will be significantly higher with students who are exposed to "student-centered" teaching than with students exposed to more conventional type of teaching.

2. Anxiety, operationally defined as PRS scores, will be significantly higher with students who are actively engaged in a learning activity than with students who have terminated their activity.

3. The variance of anxiety scale scores (PRS scores) supplied by students engaged in "student-centered" teaching will be significantly greater than the variance of anxiety scale scores (PRS scores) supplied by students engaged in more conventional learning activity.

BIBLIOGRAPHY

- Barnard, James W., Zimbardo, Philip G., and Sarason, Seymour B. Anxiety and verbal behavior in children. Child Develop., 1961, 31, 379-392.
- Bendig, A.W. Factor analysis of anxiety and neuroticism inventories. J. Consult. Psychol., 24, 1960, 161-168.
- Castaneda, A., Mc Candless, B.R., and Palermo, D.S. The children's form of the manifest anxiety scale. Child Develop., 1956, 27, 317-327.
- Cattell, Raymond B. and Scheier, Joan H. The Meaning and Measurement of Neuroticism and Anxiety, New York: The Ronald Press Co., 1961.
- Child, I.L. Personality. Annual Rev. Psychol., 1954, 5, 149-170.
- Cox, F., and Sarason, S.B. Test anxiety and Rorschach performance. J. Abnorm. Soc. Psychol., 1954, 49, 371-377.
- Curran, Charles A. Counseling in Catholic Life and Education. New York: The MacMillan Co., 1952.
- Curran, Charles A. Personality Factors in Counseling, New York: Grune and Stratton, 1945.
- Davidson, Kenneth, Sarason, S.P., Lighthall, Fred., Warte, Richard and Sarnoff, J. The difference between mother's and father's ratings of high and low anxious children. Child Develop., 29, 1958, 155-160.
- Davitz, Joil R. and Mason, Donald. Manifest anxiety and social perception. J. Consult. Psychol., 24, 1960, 554.
- Dixon, J.J., de Monchaux, C., and Sandler, J. Patterns of anxiety: an analysis of social anxieties. Brit. J. Med. Psychol., 1957, 30, 107-112.
- Farber, I.E., and Spence, K.W. Complex learning and conditioning as a function of anxiety. J. Exper. Psychol., 1953, 45, 170-125.
- Farber, I.E., and Spence, K.W. Effects of anxiety, stress, and task variables on reaction time. J. Pers., 1956, 25, 1-18.
- Frankl, Victor Emil. The Doctor and the Soul: An Introduction to Logotherapy, (trans. Richard Winston and Clara Winston) New York: Knopf, 1955.

- Frankl, Victor E. From Death-Camp to Existentialism, A Psychiatrist's Path to a New Therapy, (trans. Ilse Lasch) Boston: Beacon Press, 1959.
- ✓Freud, Sigmund. Basic Writings of, (trans. and Ed. A.A. Brill) New York: Modern Library, 1938.
- Freud, Sigmund. Early Psychoanalytic Writings, New York: Collier Books, 1963, (esp. 84-136).
- French, John D., Porter, Robert W., Cavanaugh, Edward B. and Longmire, Robert L. Experimental gastroduodenal lesions induced by stimulation of the brain. Psychosomatic Med., 1957, 19, 209-220.
- Goldstein, Leonard D. and Goldberger, Leo. Manifest anxiety and rorschach performance in chronic patient population. J. Consult. Psychol., 19, 1955, 339-344.
- Gray, Susan W. Masculinity-femininity in relation to anxiety and social acceptance. Child Develop., 28, 1957, 203-214.
- ✓Gynther, Ruth A. The effects of anxiety and of situational stress on communication efficiency. J. Abnorm. Soc. Psychol., 1957, 54, 274-276.
- ✓Hull, L. L. Principles of Behavior, New York: Appleton-Century-Crofts, 1943.
- Iscoe, Ira and Corbran, Irene. Some correlates of manifest anxiety in children. J. Consult Psychol., 24, 1960, 97.
- Iscoe, Ira and Carden, Joyce Ann. Field dependence, manifest, and sociometric status in children. J. Consult. Psychol., 1961, 25, 184.
- ✓Kierkegaard, Sofren. The Concept of Dread, (trans. Walter Lowrie) New Jersey: Princeton University Press, 1946.
- Kierkegaard, Sofren. Fear and Trembling and Sickness Unto Death, (trans. Walter Lowrie) New York: Doubleday and Co., Inc., 1955.
- L'Abate, Luciano. Personality correlates of manifest anxiety in children. J. Consult. Psychol., 1960, 24, 324-348.
- Lindsley, D.B. Emotion. (Ed. S.S. Stevens) Handbook of Experimental Psychology, New York: Wiley, 1951, 473-516.
- Malmo, R.B. Activation: a neuropsychological discussion. Psychol. Rev., 1959, 66, 367-386.
- ✓Malmo, R.B. Measurement of drive: an unsolved problem in psychology. Nebraska Symposium on Motivation, Nebraska: University of Nebraska Press,
- Malmo, R.B. Slowing of heart rate after septal self-stimulation in rats.

Science, 1961, 133, 1128-1130.

Malmö, R.B. Boag, Thomas, J., and Smith, Arthur A. A Physiological study of personal interaction. Psychosom. Med., 1957, 19, 105-119.

Malmö, R.B., and Sarivillo, Walter W. Sleep deprivation: changes in performance and physiological indicants of activation. Psychol. Monogr., 1960, 74 (15, whole No. 502) 3-28.

Malpass, Leslie F., March, Silvia, and Palermo, David S. Responses of retarded children to children's manifest anxiety scale. J. Educ. Psychol., 1960, 51, 305-308.

Malrig, L.R. Anxiety and academic prediction. J. Consult. Psychol., 1954, 11, 22-75.

Mandler, G. and Sarason, S.B. A study of anxiety and learning. J. Abnorm. Soc. Psychol., 1952, 47, 166-173.

Maslow, A.H. A dynamic theory of human motivation. Psychol. Rev., 50, 1943, 370-396.

Maslow, A.H. Motivation and Personality, New York: Harper, 1952.

May, Rollo. The Meaning of Anxiety, New York: The Ronald Press, 1950.

May, Rollo, Angel, E. and Ellenberger, H.F. (Editors) Existence, A New Dimension in Psychiatry and Psychology, New York: Basic Books, Inc., 1948.

McCall, R.J. Invested self-expression: a principal of human motivation. Psychol. Rev., 1963, 70, 284-303.

Miller, N.E. Studies of fear as an acquirable drive. 1. Fear as motivation and fear-reduction as reinforcement in the learning of new responses. J. Exp. Psychol., 338, 19, 48, 89-101.

Mowrer, O.H. A stimulus-response analysis of anxiety and its role as a reinforcing agent. Psychol. Rev., 1939, 46, 553-565.

O'Kelly, L. I. The psychophysiology of motivation. Ann. Rev. Psychol., 1963, 14, 57-92.

Olds, J., and Milner, P. Positive reinforcement produced by electrical stimulation of septal area and other regions of the rat brain. J. Comp. Physiol. Psychol., 1954, 47, 419-427.

Phillips, Beeman N. Sex, social class and anxiety as sources of variation in school achievement. J. Ed. Psychol., 53, 1962, 271-274.

- Rogers, Carl Ransom. Client-Centered Therapy, Boston: Houton Mifflin Co., 1951.
- Rogers, Carl Ransom. On Becoming a Person, London: Constable, 1961.
- Rogers, Carl Ransom. Counseling and Psychotherapy, New York: Houton Mifflin Co., 1942.
- Sarason, I.G. The effects of anxiety and threat on the solution of a difficult task. J. Abnorm. Soc Psychol., 62, 1961, 272-275.
- Sarason, I.G. Empirical findings and theoretical problems in the use of anxiety scales. Psychol. Bull., 1960, 57, 403-415.
- Sarason, S.B., Davidson, Kenneth, Lighthall, Fred, Warte, Richard, and Bretta, Ruchbush. Anxiety in Elementary School Children, New York: John Wiley and Sons Inc., 1960.
- Sarason, S.B., Davidson, Kenneth, Lighthall, Fred, and Warte, Richard. Classroom observation of high and low anxious students. Child Development, 29, 1958, 287-295.
- Sinick, Daniel. Two anxiety scales correlated and examined for sex differences. J. Clin. Psychol., 12, 1956, 394-395.
- Spence, Kenneth W. A theory of emotionally based drive (D) and its relation to performance in simple learning situations. Amer. Psychol., 13, 1958, 131-141.
- Sperber, Zanivil. Test anxiety and performance under stress. J. Consult. Psychol., 62, 1961, 226-233.
- Sutton-Smith, and Rosenberg, B.G. Manifest anxiety and game preference in children. Child Development, 31, 1960, 307-311.
- Taylor, Janet A. The relationship of anxiety to conditioned eyelid response. J. Exp. Psychol., 1951, 41, 81-92.
- Taylor, Janet A. Drive theory and manifest anxiety. Psychol. Bull., 1956, 53, 303-320.
- Taylor, Janet A. A personality scale of manifest anxiety. J. Abnorm. Soc. Psychol., 48, 1953, 285-290.
- Taylor, Janet A. and Spence, K.W. The relationship of anxiety level to performance in serial learning. J. Exper. Psychol., 53, 1952, 1-64.
- Walker, R.E. and Nicolay, Robert C. A reexamination of anxiety: the Nicolay-Walker personal reaction schedule. Loyola University Chicago (Unpublished paper).

Westrope, Martha. Relations among Rorschach indices, manifest anxiety, and performance under stress. J. Abnorm. Soc. Psychol., 1953, 48, 515-524.

White, R.W. Motivation reconsidered: the concept of competence. Psychol. Rev., 1959, 66, 297-333.

Yerkes, R.M. and Dodson, J.D. The relation of strength of stimulus to rapidity of habit-formation. J. Comp. Neurol. Psychol., 1908, 18, 459-482.

APPROVAL SHEET

The thesis submitted by William E. Davis has been read and approved by three members of the Department of Psychology.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

Jan. 21, 1965
Date

Richard C. Cerran
Signature of Adviser